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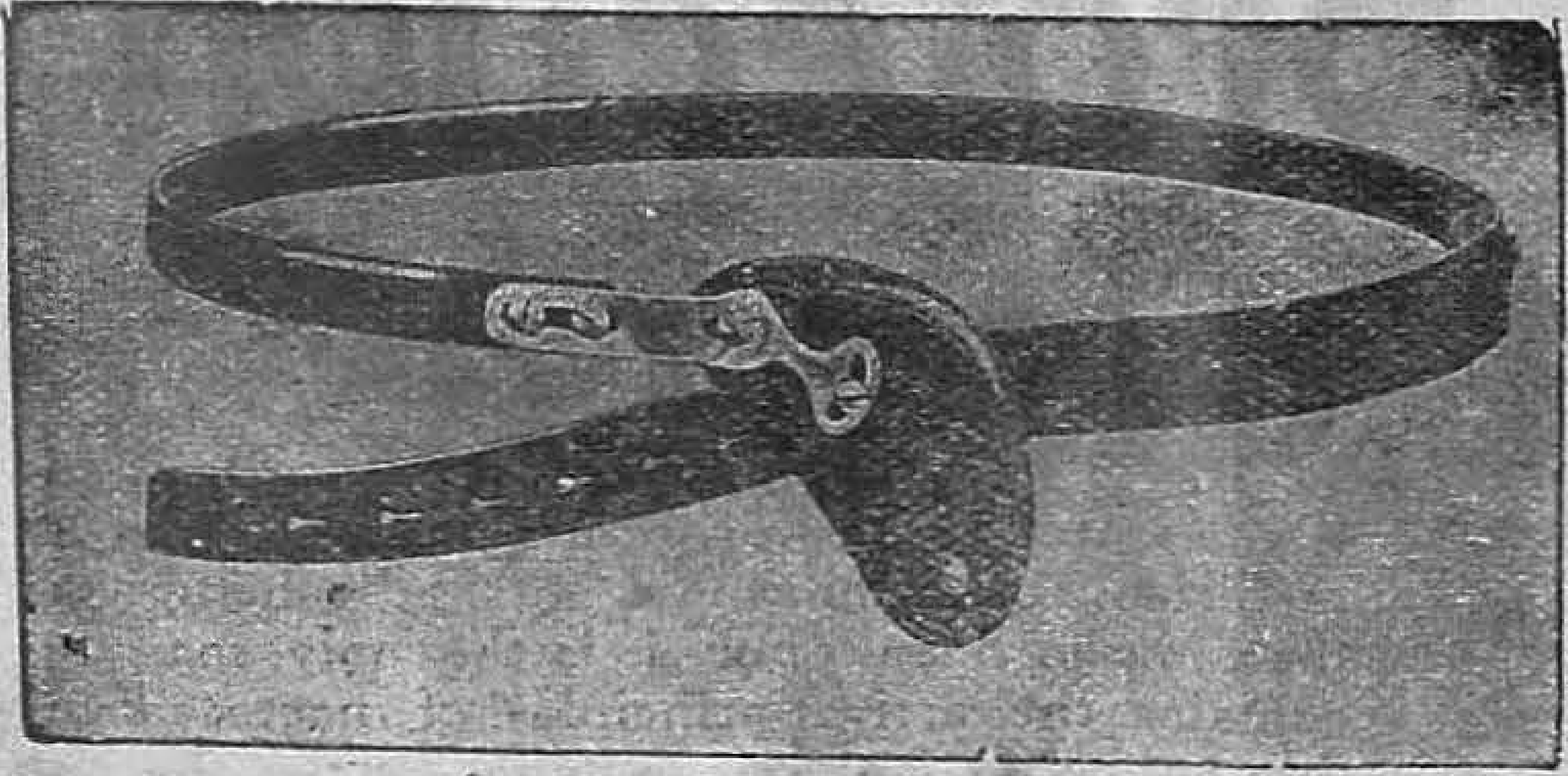

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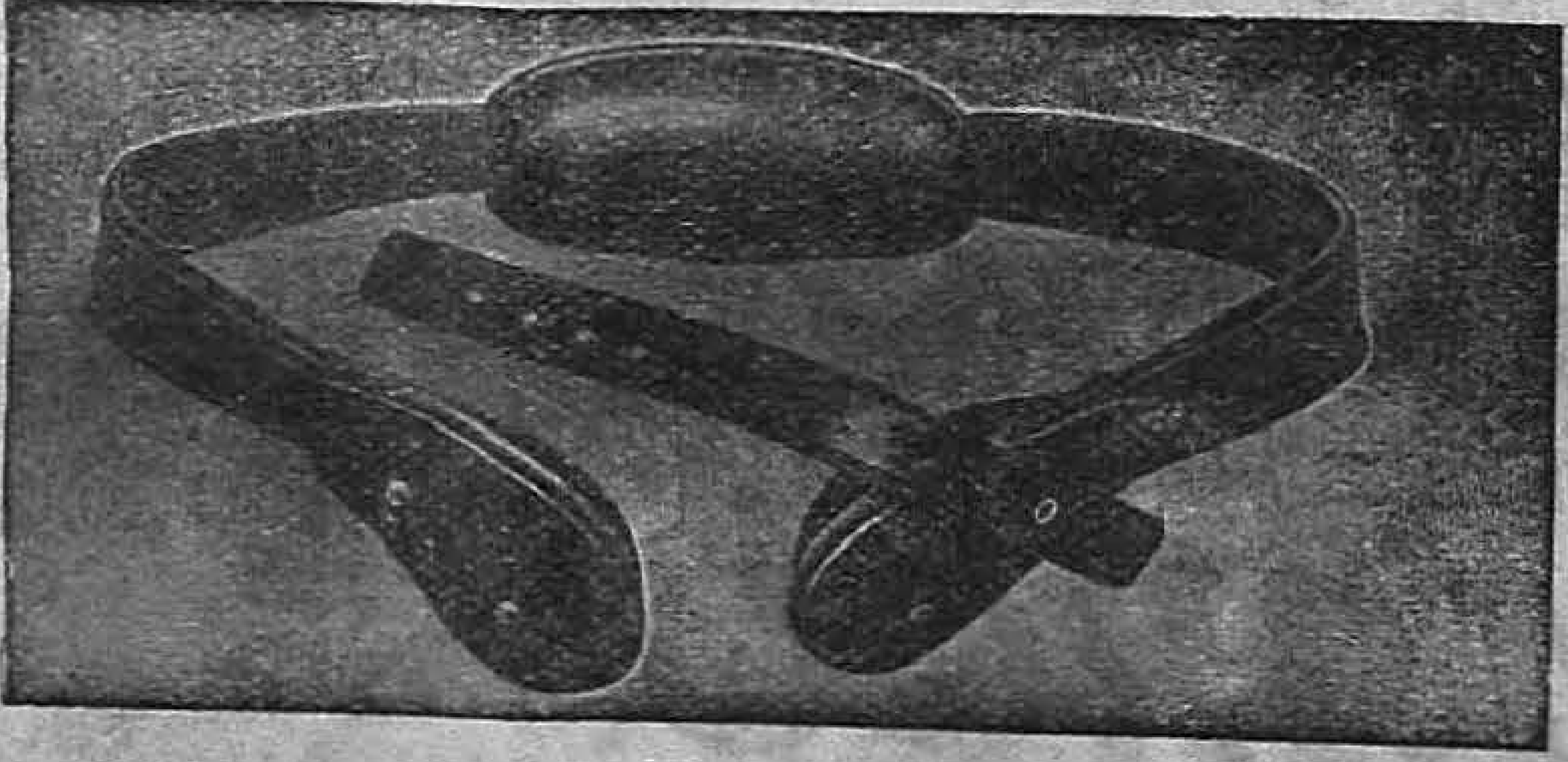

SRI KRISHNAN BROS., 323, Thambu Chetty St., MADRAS.

ESTD., JAN. 1923.

Health

A Journal Devoted to Healthful Living

Edited By Dr. U. Rama Rau & U. Krishna Rau, M.B.B.S.

Published in

ENGLISH, TAMIL, TELUGU AND CANARESE.

Annual Subscription for any edition Re. 1-8. Foreign Rs. 2. Post paid.

Editorial and Publishing Offices:—323, Thambu Chetty Street, George Town, Madras.

Vol. XV.	OCTOBER, 1937	No. 10

7 OCT 1937 MADRAS

Editorial

Health Education in Schools in India

IN the programme of the Congress Ministry in all the six—now seven—Provinces of India, next in importance to Prohibition comes Education. India is educationally a backward country and the Government, in the past, had established schools mostly to secure clerks knowing English for its offices. As a result of this short-sighted policy, we find to-day wide-spread unemployment and acute starvation among the so-called educated middle classes. Children living in rural parts generally discontinue their studies after reading up to the primary standard and take up work as field labourers or industrial workers to eke out their living. In course of time, they forget even the very little they have learnt at school and there has thus been a colossal waste of time, money and energy. The Congress Ministry now intends to overhaul the existing system of education and give it a thorough national and vocational turn. We have nothing to suggest in our 'Health' by way of improvement of the present system of education. It is for the educationists to devise a proper scheme but we must impress on them the necessity for inclusion of Hygiene as one of the compulsory subjects in the curricula of studies. Health is one of the first aims of education and school programmes which sacrifice the health of the pupil for the acquisition of knowledge cannot, by any means, be justified. We have no desire to embarrass the Ministry in Madras, who seem to be already upset

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by the intensity of the volume of objection raised against their proposal to make 'Hindi' as one of the compulsory subjects in the first three forms, by adding also Hygiene to the list of compulsory subjects. As a Health propagandist, we have to do our duty and the present situation demands drastic remedy.

The condition of the school child in India at the present day corresponds to the following description of Miss. Beatrice M. Gerahty, Director, 'Little Citizens' Free Kindergarten, Sydney, New South Wales, in her contribution to the Health Section of the World Federation of Education Associations, 1931: "The child frequently arrives at school physically undeveloped, due to lack of nourishment, sunlight and fresh air—the product of a community ignorant in the rudiments of health laws. He is often mentally dull and usually much below the mental standard for his age, at times totally unable to focus his attention or to concentrate on the various Kindergarten activities." So, particular attention must be given to the physical well-being of the children. The establishment of health habits with respect to hours of work, diet, rest-periods and play, is one of the most important aspects of the work in the Kindergartens and form the basis for much of the work with the children.

With regard to hours of work, the Congress Ministry's recent move to shift the class work to morning hours 7—11, seems to us to be a step in the right direction. The change in school hours will certainly stimulate or rather resuscitate the sublime health habits of Indians in Pre-British days. Before the advent of the English, the schools and even offices were conducted during morning hours and evening hours, the hottest part of the day 11 A.M. to 3 P.M. being set apart for rest in homes. If the school work should commence at 7 A.M. the pupil will perforce have to rise up in the morning, clean his teeth, answer calls of nature, bathe, dress, eat and be ready to start for the school before that time. 'Early to bed and early to rise makes a man healthy, wealthy, and wise' and this wholesome rule which has been discarded all these years, will again come to be observed. The question arises as to what the school-boy should eat at this early hour. In rural parts, children of the poor folk will have their usual rice conjee or ragi porridge. After 11 A.M. he will be free to go home and take his second meal. Full five hours would elapse before the first meal gets digested and the next meal is taken. The third meal may be taken at 6 or 7 P.M. Thus, the diet of the school boy will be regularised and he will no more be the victim of too frequent feedings. The provision of mid-day meals for boys which is now made in some schools may be done away with. The trouble comes only in case of boys who are city/or town-dwellers. These children do take at or about 7 A. M. in the mornings daily some kind of breakfast such as *Iddli*, *Dhosai*, *Uppumavu*, and so on with that inevitable cup of Coffee along with their parents. Immediately after, at about 9 A.M. they have to sit for their principal meal which is generally heavy. Then they have to walk a mile or so to go to the school in the hot sun which is just beginning to be felt. By the time they reach school, they feel very much fatigued. The hottest part of the day is spent in congested

and ill-ventilated class rooms. Their lunch is the same eatables which they partook in the mornings or some stale edibles. After 4 p. m. they will have to perform their drills and exercises. When they reach home in the evenings, they look dull and terribly exhausted. This is not an overdrawn picture of school-boys in towns and cities attending schools from 10 A.M. to 5 P. M. with an interval of one hour for lunch. If he is made to attend in the morning hours, he can come after his morning breakfast, take his substantial meal at 12 noon, have rest till four or five and attend to his drill or vocational classes in the evenings between 5 and 6. Walking a second time to the play-ground in the evening after the Sun's severity for the day is over, will not do him any harm. On the other hand, it will be a sort of exercise to his limbs. In Czechoslovakia, "regular teaching in secondary schools lasts generally from 8 A.M. to 1 P.M. In the higher classes, there is also afternoon teaching generally of special subjects once or twice a week. Between the individual hours, there are intermissions of 10—15 minutes in which the pupils go out into the corridors or the court-yards for fresh air and recreation. In the Czechoslovakia Republic the average number of pupils for the class is 30. The fixing of the teaching hours and setting of home-work is subject to special regulations. Special care is given to physical exercise. Gymnastics twice a week are obligatory, for both the sexes. Besides the obligatory gymnastic exercises, games are supervised by the Professors twice a week in good weather. In large towns so-called "Mausac" (dining halls) have been instituted, providing good lunches and dinners for low prices. The student clinics work very successfully in relation to the secondary schools. In nearly all the places where secondary schools exist, the local medical men accept reduced fees for attendance on pupils". We hope India will profit by the educational policy adopted by the small republic of Czechoslovakia outlined above.

Ideal Dress for an Indian.

The other salutary reform which the Congress Ministry has recently introduced is in regard to dress. A heavy dress, with boots, trousers, shirts, coats, collars etc. is really irksome and burdensome and certainly tells upon the health of the wearer in a tropical country like India. Here we want some loose, light dress. The recent communique of the Government considers a cloth, a shirt and an *angavastram* or upper cloth as a decent dress and this we consider also as a healthy and economical dress. We are grateful to the Ministry for relieving the school-children of their great burden of dress.

Whilst the Congress Ministry is thus trying to do its best towards the nationalisation of the school, we trust it will not leave Health Education in

the background and thus repeat the same mistake committed by its predecessors in Office. In this connection, we would quote a few relevant conclusions arrived at by the Special Committee appointed by the League of Nations Health Organisation in 1933, to investigate and report on Rural Hygiene in South Africa, which may with advantage be adopted in India:—

1. "It was agreed that teaching of hygiene and elementary sanitation should be given a prominent place in the curriculum of all schools. It is essential that training schools for teachers should lay special stress on instruction in Hygiene and the instruction should include methods of teaching children the elements of Hygiene. In primary schools, use should be made of primers based on Hygiene".

2. "Education of the adult by word of mouth in dispensaries and hospitals, at communal meetings and specially organised gatherings at which the use of lantern slides and the cinema is a very valuable aid and attraction should be encouraged and utilised as much as possible".

3. "The services of District Medical Staff should be utilised where necessary in initiating instruction in teaching hygiene and sanitation both in teachers' training school and in ordinary schools. It is to be emphasized that hygiene and sanitation teaching should be simple and practical and that the teaching of these subjects should not be complicated by instruction in Anatomy and Physiology under the guise of 'Hygiene' as is now apparently often the case".

The Medical Argument Against Alcohol

By G. Raman Pillai, M.B., Ch. B. (Edin.)

Trivandrum.

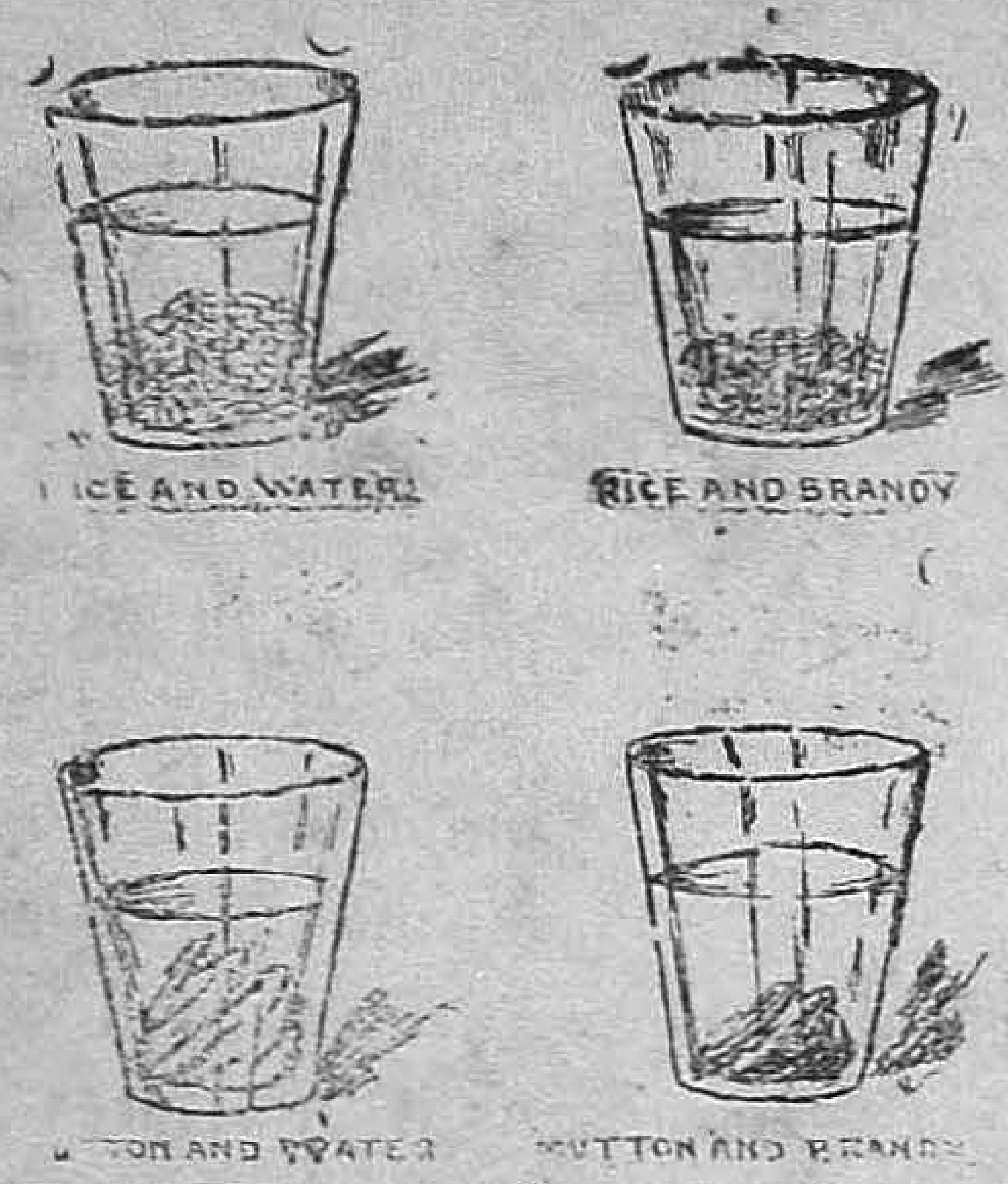
MEDICAL opinion in recent years has been hardening against the use of alcohol as a physiological necessity. It is loosely stated, that alcohol is a food or an aid to digestion, a stimulant to jaded or flagging nerves, a sedative that lulls our senses to a forgetfulness of the realities of modern life, an anodyne for our pains, a solvent of the worries that we cannot face in sober judgment, an inspirer of deeds of heroism and genius that conquers empires and moves mountains and men. On the other hand, it is asserted with no less vehemence, that such extravagant claims are unwarranted, and that alcohol is positively injurious to the well-being of the individual, the family, and the community, in the moral, physical, and economic aspects of human life. It is necessary to examine some of the assertions with a dispassionate judgment in the light of the scientific data and experience of the physiological effects of alcohol on the human constitution in ages past. No unbiassed judgment need be hoped for from the profiteering interests of the trade and their clientele of millions of addicts and victims of the habit, nor from governments obsessed by the nightmare of deficits of revenue rather than by ultimate consequences on the

human species. If it can be established that alcohol is injurious to man, then, whatever the difficulties, a way somehow be found to remedy the evil at all costs, for the sake of posterity even at some restraint and discomfort for the present.

Alcohol is not a food proper. Our natural foods, the proteins, the fats and the carbohydrates are received into the body in appropriate organic receptacles, and treated by appropriate digestive juices that convert them into suitable substances that are stored in certain storing organs (the liver, the muscles), from which they are drawn as required by the body. These natural foods do not damage any organ in the body in their digestion or passage through it as does alcohol that, as it were, 'scorches' its passage through the tissues, causing damage to the cells for which they are a poison. Alcohol diffuses into, or traverses the body too rapidly and without any alteration, to act as a reserve of nourishment; it burns up or is oxidised rather quickly, somewhat like its combustion noticeable when it is fired outside the body. Unlike in the case of foods, our body is always trying to speedily eliminate any unburnt alcohol from it, as its prolonged presence would irritate and damage the cells. A food proper is not so urgently got rid of or expelled. As a fuel for the body, it is too violent and too readily combustible or explosive in its action. Alcohol cannot be stored in the body as such it cannot be classed as a food. It may be looked upon as a fuel, just as petrol is a fuel (and not a food) to the motor engine. But the living body should not be treated as a machine · what it needs is food rather than fuel. It must be treated as a biological and not a mechanical entity. In fact alcohol is an unwanted intruder in the tissues, as it interferes with the normal oxidation of foods in them and causes accumulations of superfluous fat from the incompletely digested foods. Chronic alcoholism so hardens the lining of the stomach that the normal sensitive response to food is dulled, and the appetite has then to be 'stimulated' with more alcohol—setting up a vicious and inescapable cycle of complications. It seems obvious that alcohol cannot find a place among the foods of man.

It is said that alcohol is an aid to digestion. This statement can only arise from those who have the means of eating more than they can naturally digest—to whom the 'cock-tail' is an indispensable 'appetizer'. But we have to consider the masses of India, among whom the trouble is, not a weak digestion, but, a vigorous enough digestion with too little to be got for the eating. A digestive stimulant would in this case only aggravate an insatiable appetite! Even the wealthy diner soon discovers that his 'cock-tails' have their limits, and cannot save him from sheer excesses of indigestible victuals. If alcohol is both

a stimulant and a food, why then eat other foods at all? But life is insupportable on alcohol alone, as it can be on the real foods.



Alcohol hardens food, thus impairing digestion.

The stimulating properties of alcohol have been unduly exaggerated. The great hospitals in England have discarded the use of alcohol as a stimulant for the last thirty years. The English physicians have evidently given up in despair the hope of stimulating with reasonable pharmacopoeal doses of the drug, chronic alcoholics who had been daily consuming ten times or more of a stimulating dose! Alcohol can act as a stimulant only if it is respected as a drug to be prescribed and not assumed as a beverage for universal and daily consumption. Nothing can stimulate when it is used as a routine habit every day. To benefit by its stimulating action we have to be abstainers, not habitues!

Is alcohol really a sedative, an anodyne, or comforter to the troubled body or mind? In Solomon's Book of Proverbs, a drunken man makes the fatal discovery that alcohol can abolish the sensation of pain. Says he: "They beat me and I felt it not; I will seek it again."' It is safe to assume that the man was beaten, not for the drinking, but for some misconduct that resulted from the drinking. He 'felt not' the pain of the beating,—and in the state he was in, he could not have realised the impropriety of his conduct that deserved the castigation. The net result is that he declares that he "will seek it again"!

The drink gave him delightful sensations; but what seems to have tickled him even more was to see that his persecutors were frustrated and baffled in their attempt to cause him the pain that was to be a corrective towards better behaviour!

Thanks to the physical 'anodyne' action of the alcohol and its 'moral anodyne' action on his ethical sense the fellow's demoralisation is well nigh complete. This is typical of the mentality of the average drunken man.

Our worries, howsoever veiled from our sensorium for a time by makeshift expedients, would return to the charge with redoubled violence, when we are made less fit to face them by our weakened wills under the influence of alcohol. Worries cannot be cured by drugs; they call for sober thinking and deliberate planned courage that is quite a different thing from what is called the "Dutch courage," that, under the influence of beer or rum produces the buccaneering virtue of old.

The realities of our existence have to be faced with all our wits intact, rather than with half of them submerged.

The days of conquest by 'Dutch courage' are past. There are soberer ways of meeting our cares. The ostrich cannot escape its pursuers by burying

its head in the sand; nor can a man overcome his cares by immersing his wits in spirits. The habit of evading responsibilities by recourse to alcohol (or opium or ganja) is cumulatively disastrous.

The Japanese are said to have encouraged opium-eating in China by a vigorous smuggling of this fatal 'anodyne.'.

And now disaster faces China, their enemies finding it easier to operate on a weakened and doped people. Were the opium-smugglers the real vanguard of the Japanese expeditionary force! No statesmen would countenance doping peoples with drugs as a solvent of human cares.

The pretensions of the advocates of alcohol do not stand the test of scientific examination. Alcohol is not a food. It is a stimulant only in people not addicted to it. Far from curing our worries in life, it but aggravates them by undermining other faculties to a state of helplessness to realise or to overcome them. The chronic poisoning of the organs by alcohol shortens the life of the Indian further than the 25 years now vouchsafed to him. It lowers the body resistance to disease and the capacity to overcome troubles. It is a narcotic that puts to sleep faculties that should help us to overcome difficulties. For these reasons alcohol is injurious to human welfare in the long run. Once this incontestable position is realised, it becomes incumbent on us to wean humanity from this dire and insidious disease of Society at any cost. Society wishes to be released from a practice that renders it insecure for its well-being, physical and moral. That the ladies retire precipitately towards the end of a banquet where the wine has begun to flow, is a sufficiently damaging testimony to its moral justification—not to mention the tragedy enacted in the home of every drunkard.

Prohibition seems imperative before the disease becomes incurable in India,—before the religious sentiments in its favour lose their hold on the people. The ideal of prohibition is stoutly opposed by the 'free-drinker' who trots out the plea of interference with the liberty of the individual. Do we really want the unconditional liberty to play ducks and drakes with our bodies and the happiness of our families, when we have yet to achieve the cardinal liberties of free men? Do we wish the man who cannot restrain himself to be at liberty to drink whenever he seeks to satisfy his abnormal craving? We have not yet acquired full liberty to speak and act on behalf of our country even as our sober reason dictates. The State has to be reassured that the citizen does not hurt himself and the community by a freedom to drug himself as he chooses with narcotics, be it opium, ganja, or alcohol. People are inoculated against smallpox, cholera and plague, for the safety of the community, the nation and of humanity. The actions of individuals have to some extent to be controlled and regulated for the general good of communities. We cannot leave even the 'free drinkers' to their unconscious fate. We cannot let their families suffer by it. We cannot fleece the tax-payer of his resources in order to maintain asylums for the support of more criminals, more destitutes, more inebriates, and more paupers — the end-products of alcoholic intemperance. All individual liberty comes after the collective welfare of the

community, the nation, and of humanity. Society is entitled to see that the innate human faculties are preserved intact and not robbed by habits inimical to race progress. Those who have the collective interests of man at heart should not grudge the little self-denial involved in banishing from their table this beverage, that has been proved to be of little physiological use to the body, but has usurped the place of our necessaries and threatened to impair human efficiency, to the prejudice of the interests of the species.

INFANT FEEDING

—— By Dr. L. R. Fernandez ——

Trichinopoly.

It has been computed that about thirty five percent of the infants who die in India are suffering from digestive troubles. The infants' digestive organs, *viz.*, the stomach, intestines, liver etc. very often get deranged by the quantity and quality of food ingested. If every mother has a perfect knowledge of the food necessary for her infants, such a large percentage of diseases and deaths will not occur. Surely not.

For the new-born the best and the most suited food is *mother's milk.* The benign Creator made mother's milk so sweet and pure that the infant may relish it and grow upon it. It is more easily digested and assimilated than any artificial milk. It is also the cheapest, cleanest and the most handy. When the baby is fed by breast-milk it has a better chance for life and for regular normal growth. The death rate of non-breast-fed babies is decidedly higher than that of breast-fed babies. Every mother ought to nurse her baby from the third day of its birth. She should do it at regular intervals. Each breast ought to be completely emptied to stimulate it properly. The hygiene of the nursing mother is very essential. Long before the baby is born, the expectant mother ought to choose the proper food conducive to aid the secretion of milk. Many mothers refrain from breast-feeding on the plea that there is not sufficient quantity of milk. This is only a fallacy. With the conception and birth of every child, there ought to be a good quantity of milk in the breast, unless the mother has neglected her health during the nine months previous to delivery. If the mother wishes to have sufficient quantity of milk for her baby, let her observe the following :—Let her take at least one seer of cow's milk morning and night. Plenty of green herbs like *Araikeerai, Mulaikeerai, Sirukeerai* and vegetables like Spinach, Cabbages, Radish, Carrots are very valuable in aiding secretion of milk. Porridge or *Payasam* made out of cotton seeds, cocoanut milk and jaggery also is a very effective galactagogue. During the nursing period let her avoid worries and anxieties, and try to keep her mind always cheerful and gay. The calm and cheerful mother can more successfully nurse her babe than the excited, worried mother. Sleep for at least full eight hours at night is very necessary for the mother and one hour's rest in the day time after noon

meals. After the first month is over, the baby ought to be able to sleep throughout the night without any feeding after 10 P.M.

Let the mother take plenty of pleasant untiring exercise in the garden or maidan, in fresh open air and sunshine. When plenty of sunshine penetrates the mother's skin, the milk is enriched. See that the mother's bowels are not constipated. Regulate them carefully by means of easily digestible and nourishing food, and not by drugs. This can be done by

Feed the Infant at regular intervals.

giving her plenty of protective foods such as milk, eggs, fruits, nuts and fresh green vegetables. Among the fruits, prunes, figs, oranges and mangoes can be relied upon for regulating the bowels daily. Cashew nuts, almonds, ground nuts and walnuts remove constipation owing to the rich oil they contain.

If the mother observes the above points no one can complain of the lack of milk necessary for the baby during ten months of lactation. Many feed their babes at random. Regular hours ought to be maintained, for instance:

In the first three weeks, feeding every	2	hours.
From 3rd week to 3rd month ,,	3	,,
,, 3rd month to 6th month ,,	4	,,
,, 6th month to 10th month ,,	4½	,,

The baby must be weaned from the tenth month. No child should be breast-fed after the 10th month, because the milk becomes watery and the child is not benefited by such nourishment. In those cases where the mother happens to expire after delivery, resort can be had to pure cow's milk, as this is the second best food for the infant. As the cow's milk contains casein, butter etc. in greater quantity than mother's milk, the former may cause intestinal upsets. So it ought to be diluted as follows:—

For a child 1—3 months 1 part milk and 2 parts water
For a child 3—6 ,, 1 ,, ,, 1 part water
For a child 6—8 ,, 1 ,, ,, ½ part water.

After the eighth month as the digestive organs of the babe get strengthened, water need not be added. Care must be taken that the cow from which milk is derived is healthy, stout and free from tuberculosis, as many of the cows are suffering from bovine tuberculosis in India and the children invariably get consumption from such milk. The vessels in which milk is boiled must be scrupulously clean. Chiefly in the summer season, milk soon deteriorates owing to the Lactic Acid Bacillus present in milk. If the milk in hot months is boiled with a pinch of Sodium Bicarbonate, it does not deteriorate.

A word about patent foods. It is admitted by all dieticians that fresh mother's milk is far better than any patent food which has been tinned months and years back in foreign countries, and exported for trade. Granting that they have been tinned only recently, they are more costly than mother's milk and not within the reach of most of our poor Indian mothers. So for both rich and poor infants, the safest and the best food is the God-given *Mother's milk.*

Infectious Diseases Among Children and their Prevention

"There is nothing which persevering effort and unceasing diligent care cannot over-come"—Seneca.

By G. N. Aiyangar

Vizianagaram

MORTALITY among children between the ages of one and five, of infectious diseases is the largest, and mostly so in India and this can be avoided by the timely care of the mother or the nursing attendant. But it is deplorable to note, that Indian mothers leave everything to the inscrutable ways of Providence and thus it may be said, wantonly expose their children to risks and nay, even into the jaws of death.

The main diseases occurring amongst children are, Ophthalmia Neonatorum (eye disease), Summer Diarrhœa, Measles, Whooping Cough, Diphtheria, Chicken Pox, Mumps, Scarlet Fever and Tuberculosis. Ophthalima Neonatorum affects babies during the first days of life, whilst Summer Diarrhœa, affects them, during infancy and the rest of the diseases, during the latter period of child-hood. Measles takes the largest toll.

All infectious diseases are caused by certain bacteria or micro-organisms which multiply after settling in the body. Each disease is due to a certain specific organism. It means, that a small pox germ will only produce small-pox and *none* else. Bacteria require suitable conditions for growth in the body *viz.*, heat, moisture, darkness and the required food. If no resisting organisms are present they thrive freely and well.

The growth of Bacteria in the body can conveniently be compared to the growth of plants in the soil. A plant in a suitable soil with favourable conditions thrives on very well and so also bacteria with suitable condition in the body find a congenial place for growth. Further, as a bean plant produces only beans and not chillies, so also, as has already been pointed out, a small-pox germ in the body, produces only small-pox and not diphtheria. Hence bacteria entering the body of a weakling finds a happy sojourn and does not leave the child easily. Poisonous organisms entering the body through the digestive and respiratory tracts, decayed teeth and diseased tonsils and adenoids, again provide a safe place for them to grow. Hence, particular care should be taken of the dental, nasal and oral tracts of the children if one wishes to prevent them from contracting infectious

diseases and the following rules have to be observed :—

The mouth should be washed and the throat gargled both morning and evening with pure water. The teeth should be brushed twice a day. They should be got examined by a dentist periodically and any carious teeth have to be attended to. Tonsils and adenoids obstructing breathing should be got remedied. All nasal discharges should be blown into a clean kerchief. It should not be used by any others but must be boiled in water before using it once again. The habit of licking the slates and biting pens and pen-holders amongst children, should be strictly put down. Every day it should be seen, that the bowels of the child move properly. Most of the time of the child should be spent in the open. There is a difference between a contagious disease and an infectious disease. Contagious diseases are those in which the diseases are spread by obvious contact viz., Itch, Ringworm Syphilis and Gonorrhœa, while Infectious disease is a term used for a disease the spread of which is not so direct and obvious as in the case of the contagious disease. The term communicable disease is also used for it.

Infection is transmitted from child to child through the body in several ways namely the skin, the alimentary tract, the respiratory tract, the urine, other discharges, intermediate hosts and air. Microbes cannot penetrate through the skin when it is intact, but when there is any slight cut or wound on the body it paves the way for their entry.. Tetanus and Erysipelas are caused by the contamination of the wound on the skin by the organism and malaria by the bite of the mosquito carrying the malaria germ. The germs of epidemic diarrhœaand typhoid reach the body through the food and water we take in. In India especially, food and water are mostly contaminated and particular care should be taken to prevent it. This can only be achieved by the systematic action of local bodies in protecting water supplies and foods exposed for sale. The Prevention of Food Adulteration Act, should be strictly enforced even in rual areas. The house fly is the dangerous enemy

Flies carry disease germs.

of all and it is responsible for the transmission of a number of diseases. Through the air we breath in a number of organisms enter the body by which alone we acquire Tuberclosis, Influenza, Measles, and Small-pox. Certain poisons are also transmitted through the placenta to the child.

The control of infectious diseases is an important factor and there are two methods for the same. Firstly, the organism should be prevented from entering the body and secondly the resisting power of the individual who is exposed to infection should be increased so that when the germ enters the body, it cannot thrive on but, dies a natural death. The methods to be adopted are many. At the outset,

notification of the presence of an infectious disease in any community is quite essential. The attendant doctor or nurse or any person who knows the presence of the disease, should intimate the same to the Health authorities. By adopting such a procedure the authorities would take precautions in preventing its spread.

In England, there is what is known as Infectious Diseases (Notification) Act by which it is incumbent on the part of any person who is aware of the existence of any infectious disease to intimate it to the proper authorities. But in India, and in our Presidency especially, we have none, excepting a few bald provisions in the Local Boards and Municipalities Act, which are honoured more in the breach than in their observance. The congress ministry propose to introduce the Public Health Act and with it, it is hoped, a new era would dawn in the administration of Public Health in the Presidency.

When the existence of an Infectious Disease is thus known by Notification, the patient has to be removed to an Infectious Diseases Hospital, or isolated properly at home by the Health authorities. Further no children who come in contact with the patients should be allowed to attend the school till the period of incubation is over. After the patient has recovered from the illness, the whole house should be thoroughly disinfected.

Disinfection has to be carried on by burning 2 lbs of sulphur for every 1000 cubic feet of space in the middle of the room, closing all doors and windows. Afterwards, the room has to be sealed for 12 hours at least, or a 2 percent solution of formalin, or a one percent solution of perchloride of mercury can be used as a disinfectant for spraying in the rooms. The clothes of the patient have to be disinfected by steam. When a patient is isolated at home, the urine and motions should also be disinfected by mixing it with a five per-cent carbolic or perchloride of mercury and then emptied into a night soil cart. The intermediate hosts such as the rat flea, flies, bugs and lice can be got rid of by putting the articles in a steam disinfecter.

Producing immunity in a child is the best source of prevention of an Infectious disease. The microbes when they enter the body multiply, if a suitable soil is found. While growing, these microbes manufacture poisons: the absorption of these poisons into the blood produces the disease of the particular organism. Side by side, with this poison, produced by these enemy organisms, the allies in the blood, namely, the white cells, assuming the role of *eating cells*, attack the enemy microbes. To whichever part of the body these enemy cells go, the white cells rush there too, and attack them. There are also certain anti-toxins produced in the blood which fight the toxins that enter therein. By creating immunity in the body to a particular disease, infectious disease can be prevented from attacking the children. One is Natural, and the other is Artificial immunity. Certain people are immune to a particular disease. It will be seen, that human beings are immune to Rinderpest and other animal diseases, whilst animals are immune to measles and whooping cough.

Acquired immunity is caused either by an attack of a similar disease occurring previously or by frequent exposure to small doses of the organism. This exposure may not produce the disease

itself, but would be sufficient to protect the person from getting the infection. It is a common observance, that doctors and other attendants in Infectious Diseases Hospitals and people in urban areas, are immune to infection, simply because they are exposed to the infection continuously.

Vaccination against small-pox is a sure prevention from it, the immunity so produced is an acquired one.

By passive immunity is meant the introduction of immune bodies obtained from the blood of other individuals who had an attack of the disease.

Anti-toxic serum for Diphtheria is an example of this kind.

It may be pointed out that the above are only the general methods of combating infectious disease. No two diseases can be successfully dealt with by one and the same method. Some are effectively controlled by preventing the infective material reaching the body and some are dealt with by immunization. Each disease has a line of action of its own.

Let me end by echoing the common adage that "Prevention is better than cure" and that mothers would be wiser in preventing their children getting these diseases, instead of making frantic attempts to get them cured of the disease after it is got.

Physical Fitness

(Contd. from p. 8, Vol. XV, No. 3, Mar. '37 issue of 'Health').

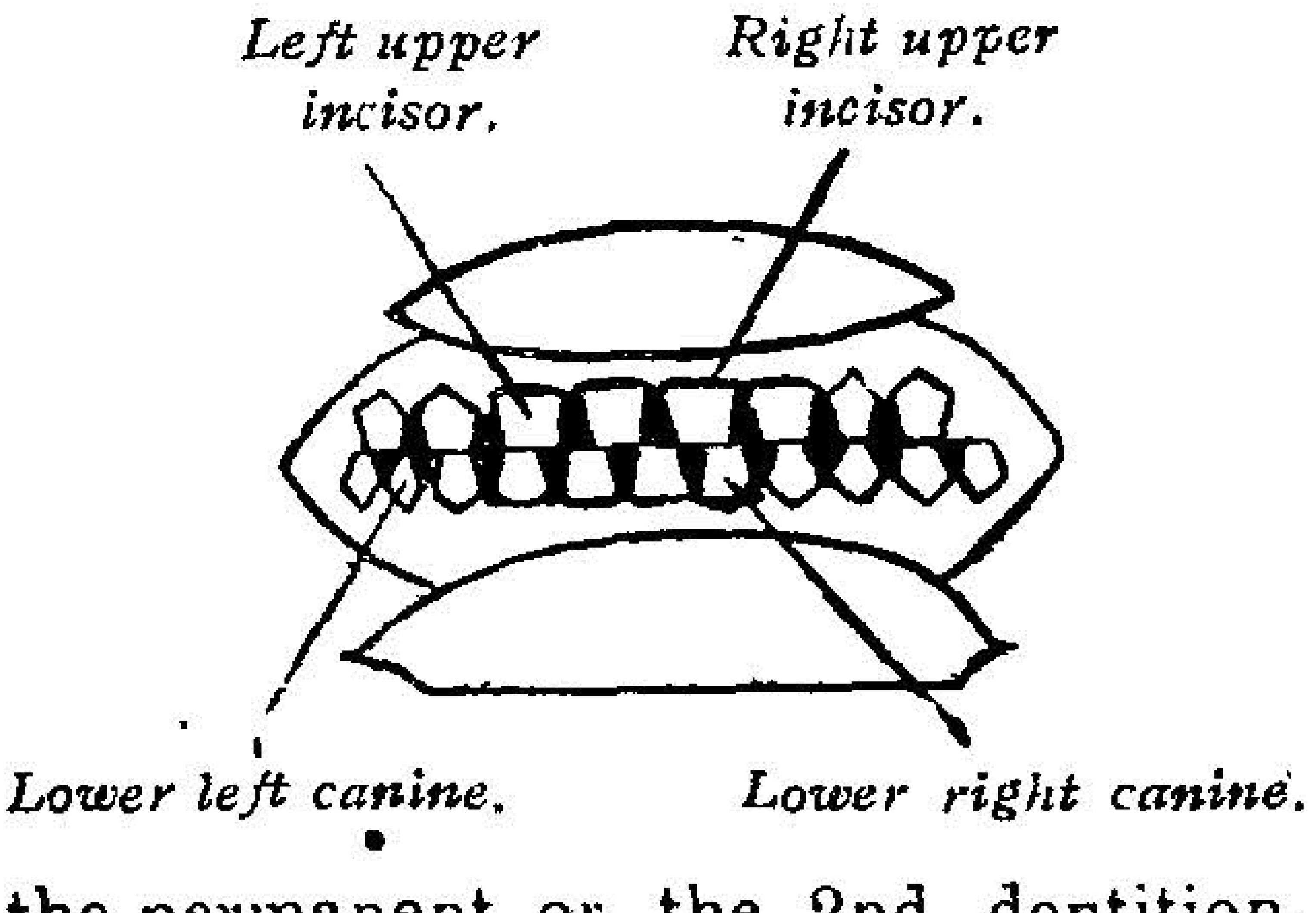
—By Khagendranath Chatterjee,—
M.B., Lt. I.M.S.,(Retd.), Chinsura, Hoogly.

THE TEETH

A GENERAL idea of the teeth, their number, position, shape and usefulness may be made from the following description. Two types of the teeth appear in the human skull, the temporary or first dentition, and

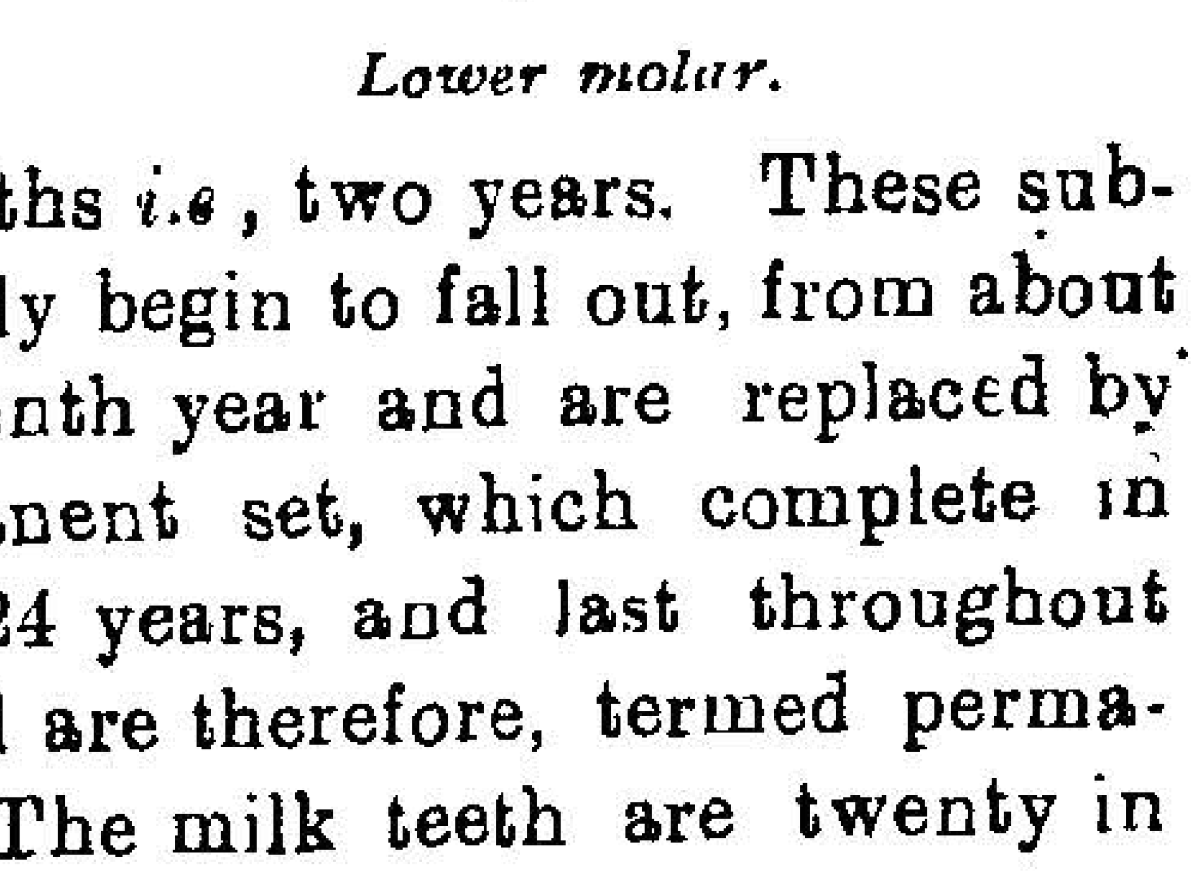
TEETH AND GUMS

Front View.



the permanent or the 2nd dentition. The temporary teeth are called the milk teeth, because they appear in the 'breast fed baby' from about the seventh month, and complete in about

Side View.



24 months *i.e*, two years. These subsequently begin to fall out, from about the seventh year and are replaced by a permanent set, which complete in about 24 years, and last throughout life, and are therefore, termed permanent. The milk teeth are twenty in number in all, ten in the upper jaw, and ten in the lower. These ten are

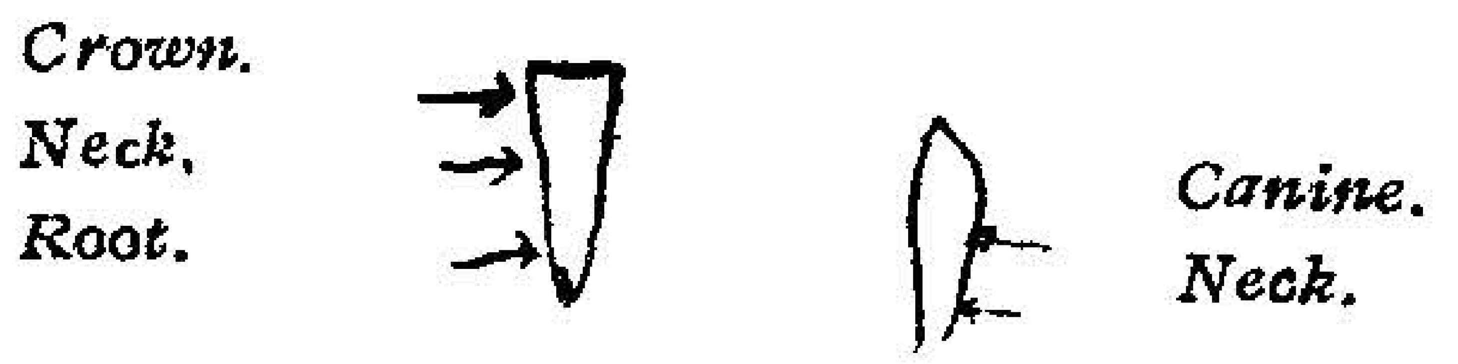
again divided into two equal halves, *i.e.*, each five consist of the same kinds of teeth, as will be described presently. There are three kinds of teeth in the milk set, namely the incisors, the canine and the molars. The incisors are centrally placed, and are four in number in each jaw. They look like chisels and spades, as they are flat and their edges are sharp. These teeth are meant for cutting solid food. By the sides of these incisors, are two pointed teeth in each jaw, called the canines, as they somewhat look like the pointed teeth of the canine or carnivorous animals, such as the wolf, the dog, the cat etc. Although the human canine teeth are not as sharp and pointed as those of the animals, yet from their similar appearance, it is argued that human beings should be meat eaters, or at least meat should be one of the items of human diet. Whatever it might be, these canine teeth are used in biting solid diet. The number of the incisors and canines are the same in the temporary set, as they are in the permanent group.

By the sides of the canines on both sides, appear quite a different kind of teeth, called the molars. The milk molars are four in number in each jaw. They are rounded in shape, and their upper surfaces are wide and irregular, and are therefore, suitable for chewing and grinding hard food. Out of the ten milk teeth, five consist of two incisors, one canine, and two molars, and as this set of five teeth, is arranged in pairs, the total comes to 4 incisors, 2 canines, and 4 molars, thus making the number ten, in each jaw.

The permanent teeth are of four kinds, the incisors, the canines, the premolars and the molars. They are thirtytwo in number in both jaws, that is sixteen in each. Out of these sixteen, eight are arranged in pairs, consisting of the same kinds of teeth, just as the set of five in the milk-set does. These eight consist of two incisors, one canine two premolars, and three molars. The permanent teeth, therefore, are very similar to the milk teeth, except that there grow in addition the two premolars before the molar teeth, *i.e.* between the canines and the molars, as the word 'Pre' means before. The permanent molars are three in number each side, instead of two as in the milk set, but sometimes the third molar does not appear at all. The third molar is called the wisdom tooth, as it appears late.

A short narration of the shape and composition of the teeth will be of interest and will prove instructive as well. The tooth consists of three parts, the crown, the neck and the root.

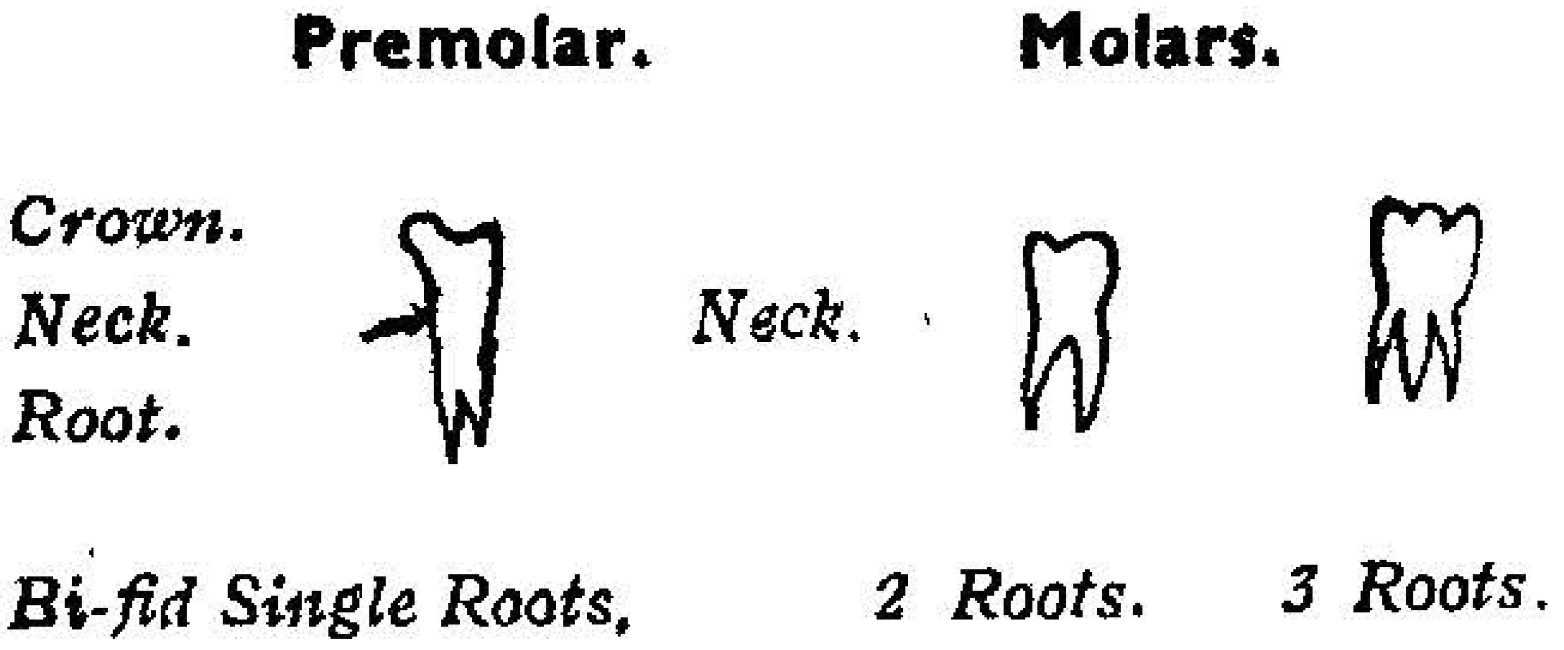
Incisor and Canine.



Single Roots.

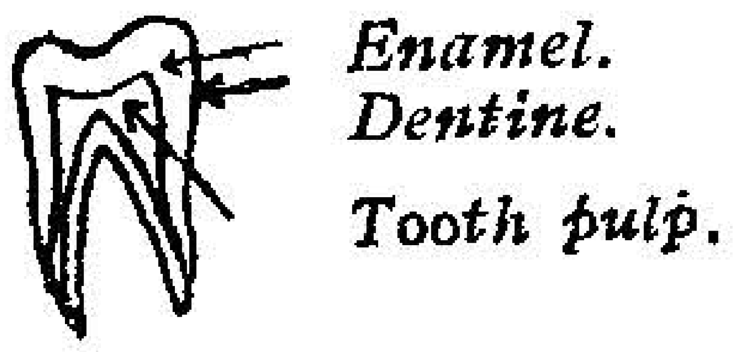
The part which remains outside the gum, is called the crown, and is the widest part. The part which touches the gum, and is narrower than the crown is known as the neck. That portion which remains within the gum and is the narrowest part, is called the root. The crowns of different teeth are different in shape, and so also the roots vary. The shape of the different crowns have been already described. The root of the incisors and canines are single and pointed, those of the premolars are also single, but are sometimes divided at the tip, with a groove

in the middle line. The roots of the molars are multiple, there being gener-



ally three roots in the upper molars, and two in the lower ones.

The substance of the tooth consists of three materials, the enamel, the dentine or ivory and the pulp. The



enamel is the outermost coating, and is shining and hard; the Dentine is the next layer and is the dental or tooth substance proper, within which is a cavity, which contains a soft material, called the tooth pulp. This pulp is the most sensitive substance and contains in it the nerves and blood vessels supplying the tooth. Hence, once the Dentine is eroded by decay, the pulp is exposed and gives rise to the agonising pain, commonly known as tooth ache. This happens from caries of tooth and many other causes of dental decay. When pus collects at the sockets of the teeth, or between the teeth and the gums, the condition is known as pyorrhoea, one of the commonest diseases of the teeth and gums, which brings disorder of the digestive tract, stomach and intestines first, and then invades the whole system with its poison. A general knowledge of the teeth and their structure is therefore of great importance to everybody. The above diagrams will illustrate the entire subject clearly.

Spacing of Pregnancy

By Dr. K. V. Mathew, L.M. & S.,

—Asst. Surgeon, Quilon, Travancore.—

OPINIONS are varied regarding the time that should elapse between successive pregnancies. Narrow spacing of births is one of the most important causes of premature births, infant debility and mortality among mothers and babies. Short intervals weaken the health of mothers and affect the growth of the children. It is often that we see pregnant women nursing one child at her breast, another being hand-fed and the elder ones sitting by the mother's side and eating their hungry meals, with the stamp of despair written large on the faces of all of them.

During the last few years, I have collected from among my female patients of this place, the statistics of the spaces between confinements of women who have borne babies more than six times. The table prepared by me and given below shows that the number of deaths here, among children is inversely proportional to the spacing between births. In this connection, it is to be remembered, that the mortality rate among children in Travancore as a whole, is 120 per 1000 births.

Space between two successive births.	Rate of Infant Mortality.
1 year	757
1½ ,,	603
2 ,,	518
2½ ,,	204

This may be compared with the table prepared by the Children's

Bureau of the Department of Labour in U. S. A.

Space between births.	Mortality rate.
1 year	147
2 „	98
3 „	86
4 „	86

These tables speak for themselves. It is seen that the longer the interval the mother gets to nurse the baby the greater will be the chance of its survival.

Now the question arises as to what should be the space between births for proper bringing up of the children. The smallest space between two successive full-term confinements recorded by me is 11 months. Anything below 2 years may be considered too small and above three unnecessary. It is always better to have as many children as is necessary in any family, with a space of two to three years between one another; and stop further pregnancies when sufficient number required are born. A spacing of more than three years has its disadvantages. Children always like to have company of other children, and those nearest to their own ages, they like most to play with. Brothers and sisters form company among themselves. If they do not have brothers or sisters nearer to their ages, naturally they seek for companionship in the neighbourhood, as to them, company is as essential as air or water. They imbibe ideas and learn bad habits easily and that, more from their play-mates. Hence, if there is great disparity between the ages of brothers and sisters, they seek friends outside their homes, association with whom generally is bound to be less congenial.

● Topics of Interest from Health Periodicals ●

Go to bed for your nerve cure.—" Send the husband to bed early, and keep the windows open. Sleep and oxygen will keep him sweet". This advice was given at a lecture by a Nature Cure practitioner well known to readers of Health for All, Mr. Clement Jeffrey, M. A.

According to the *Daily Sketch*, Mr. Jeffrey said: "We cannot turn our nights into days and maintain the battery of our body in a healthily charged condition. Man is not a nocturnal creature; and people's nerves would be strengthened if they retired earlier to bed.

"Often a husband is snappy because he has not had a proper night's rest. Bad temper is often purely physical in its origin."—*Health for All.*

Mosquito Breeding in Gullies.—Dr. Nicolas Gebbie, M O.H., reports that although treatment of the known breeding places at Hull was periodically carried out last year, the attention of his department was still being drawn to the presence of large numbers of mosquitoes, and it was not until some time had elapsed that the possibility of mosquito breeding in street gullies was considered. Investigation revealed that mosquitoes in large numbers were resting in the street gullies during the day time. Arrangements were accordingly made

by the department concerned for the gullies in the area affected to be cleansed and flushed. All the gullies were afterwards treated with larvicide. Special measures were also taken in order to deal with mosquito breeding underneath a portion of one of the corporation's refuse tips.—*The Medical Officer*.

The Drink Curse in France.—The French government has enacted two laws designed to aid the health of the working classes. One limits the working hours to forty per week and the other compels the granting of two weeks's vacation with pay each year to those who have been on the pay roll for at least a year. This legislation called attention to an evil influence on the welfare of the people which the authorities are not trying to abate—the drinking of alcoholic beverages. At a meeting of the Academy of Medicine, the leading organization of its kind in the country, Dr. Sieur declared that the benefit from the forty-hour law would be greatly enhanced if it were coupled with a reduction in the number of saloons.

A committee appointed at that time reported a month later. It called attention to the fact that in 1926 the Academy had noted the marked increase in the consumption of alcohol after the war. Its published warning had led to no action, and the number of saloons had continued to grow rapidly. In most countries the tax on alcohol is very high and its sale is limited to specially controlled agents. But in France the tax is unduly low and supervision of the bar-rooms is loose.

According to the Paris correspondent of the *Journal of the American Medical Association*, the Academy recommended that the government limit the number of saloons and control the preparation of drinks sold in them; that adult recreation centers be organized in which only non-alcoholic beverages be sold; that more playgrounds be laid out for children, with provision for their physical training; that city gardens be established for working people, and finally that hygienic dwellings be constructed to replace many of the hovels in large cities.—*S. in Good Health—U.S.A.*

Milk

"If we all drank milk instead of beer we should be an A1 nation instead of a C 3." (A declaration of Prof. Woollard that causes much discussion at a meeting of the Society of Medical Sciences in London.)

Throw down your ale mugs English men;
With drinking we have done.
No more we'll be a grade C3,
But every man A1.

For we must stem the deadly rot;
What manhood there is in us
Is due to mighty milk and not
The Goodness of a Guinness.

We'll fight the evil of the inns,
We'll wage a war with porter,
And milk in pail instead of ale
Shall lead us to the slaughter.

The soldier heedless of his fate
Will fight without a shudder;
The Premier steer the ship of State,
His hand upon the udder.

—*P. B., in St. Barth's Hos. Jrnl.*

A Sixteenth Century Sanitarian—We do not ordinarily think of Erasmus as a sanitarian. First comes the the scholar, humanist, writer and theologian. But such a civilized man could hardly fail to realize the hygienic

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and sanitary backwardness of the people of Europe of his day. Doubtless he correlated these things in his mind with the general benightedness of the times. The high mortality of the period was due to the low status of public, domestic and personal hygiene, which was held in less regard than in the Middle Ages. "The cities had no drainage, and dwelling-houses, with their floors strewn with rushes and their cesspools as described by Erasmus, were sinks of filth and infection. Froude, at the beginning of his History of England, notes that the growth of the population was very slow, almost stationary, the result of high infantile mortality and the effect of wars and epidemics upon the adult population" (Garrison). Bathing was regarded with superstitious dread, and was held to be chiefly accountable for the prevalence of the "sweating sickness." which was probably a form of influenza.

"One potent factor in this frightful situation was the character of living conditions among all classes during the period. From the unpaved roadway, heaped with garbage and offal pitched from the houses, the pestiferous air swept into the home of rich and poor alike. Elbowing the houses were traders' stalls selling half-decayed food of all sorts, and both houses and stalls were perfect breeding-places for any flying germs of disease. What windows there were hardly served the cause of ventilation since they were never opened. Nor was there any drainage. The mud or wooden houses had dirty floors covered with rushes that were not renewed for months on end. Under this mouldy layer of decaying vegetable matter the filth and refuse of the house accumulated, its odour filling the close rooms."

Erasmus attacked, in particular, the bad ventilation of houses and strongly advocated the installation of windows that would open and close. He advised that the covering of floors with rushes be done away with, since the rushes absorbed "*expectorations, vomitings*, the leakage of dogs and men, ale droppings, scarps of fish and other abominations not fit to be mentioned." Erasmus noted that whenever he occupied unventilated rooms he "was sure to take a fever."

This wise man did his part to advance enlightenment on every social and cultural front.—*Medical Times.*

Home Remedies for Burns.—Warning against old-fashioned home remedies for burns, such as smearing the burn with butter, grease, ointment, oils or even that old stand-by Carron-oil has been issued by the American College of Surgeons.

At the present time physicians have learned that the best treatment for a serious burn is to give the patient a pain-killer, remove the burned tissue, and apply, first a five per cent solution of tannic acid, and then immediately a ten per cent solution of silver nitrate. This forms almost instantly a black leather-like antiseptic, protective dressing. This is dried quickly and kept dry. No other dressing is applied.

The best and safest procedure in extensive burns is to call a physician immediately, in the meantime keeping the patient warm, and if no tannic acid solution is available, to make frequent applications of strong tea freshly brewed with from eight to ten

heaping teaspoonfuls of tea leaves to a pint of water. Non-greasy tannic acid pastes are also of value.—*Health Digest, New York.—Thr' The Doctor.*

Uses of the Pine.—Pine air is now supposed to be very useful for the treatment of Pulmonary Tuberculosis. The essential elements of climate required for the successful treatment of consumption are purity and dryness of the air, with an increased quantity of ozone and plenty of sunlight. Pure air possesses a remarkable aseptic power and under its influence chronic ulcers and ordinary wounds rapidly heal. The tubercular ulcerations in the lungs when brought in contact with pure air always undergo a change for the better. Hence in the hills where pine forests are—the air there has two distinct advantages for tubercular patients—(*a*) The air is pure. (*b*) It has all the quality of pine, that is, it is expected to be antiseptic. This is the reason why tubercular patients do very well in the hills where pine forests are in comparison to the hills where pine forests are absent. It is also a fact that oxygen in the form of ozone is especially destructive to all germs and micro-organisms. The modern treatment of of phthisis called "open air treatment or cure" so successfully employed in Europe is based practically on this principle.—*Med. Bulletin.*

The Nutritional Significance of the Curd Tension of Milk.—In view of the claims made regarding the relation between the type of clot formed by milk in the stomach and the ease of digestion, the Council on Foods has reviewed the evidence on the production and properties of "soft curd" milks and the relation of curd tension to digestibility. Human breast milk forms soft friable curds in the stomach whereas ordinary cow's milk usually forms tough cheesy masses which are not digested as quickly as softer curds. The boiling of cow's milk causes changes which result in the production of a softer and more quickly digested curd. Pasteurization has little effect, but softening of the curd may be accomplished by a great variety of methods. These include simple modifications used in the preparation of many infant feeding mixtures, for example, dilution, addition of acids or alkalis and the addition of various cereal waters. Commercial evaporated and dried milks usually have a low curd tension. Removal of ionizable calcium by means of treatment with a zeolite likewise yields a soft curd milk. Homogenization reduces curd tension but homogenized milk varies depending on the curd tension of the original milk. Some cows produce milk which yields a soft coagulum without treatment. The Council concluded that the evidence is meagre that any soft curd milks are more readily digested in the stomach than ordinary boiled milk used in the feeding of infants.—*J. M. M. A.*, June 12, 1937, ibid June 19, 1937.

The Busy Gastric Juice

How beautiful my gastric juices,
Turning to their sundry uses.
Soup and steak and beans and pie,
Beer and scotch and gin and rye,
Lobster paste and salted eels,
Hamburgers between the meals,
Peanut glaciers, chocolate crunches,
Morning snacks and midnight lunches,
Lunchroom poison, tearoom blah,
Pate of the foie of gras,
Bread like lead and cakes like solder.
Shredded cereals and fodder,
Lunches heavy, lunches light,
Morning, afternoon and night ...
What is time to gastric juices ?
Give 'em food and out they oozes?

—*Ars Medici*.

The Advantages of Dry Treatment over Ointments in Skin Disease.—When the skin is oily, and in the seborrhœic, an acute eczema should not be treated with fatty salves. Dry treatment with dusting powders gives satisfactory results. Oily skin, especially of the face, comedones, acne spots, oily hair, serve to indicate the type of patient suitable for the dry treatment, while those with a dry skin, deficient in sebum and not shining, and with dry hair, are best treated with salves and oils.—*P. Mulzer: Deut. med. Woch., 1936, Nr. 20.—Medical World.*

* * *

Give your Feet a Chance.—Give the feet every possible chance for proper function by investing them with shoes in which they can work with the least amount of interference—shoes with proper length, straight last, broad toes, well-balanced, moderate-height heels, well-fitting counters, and stiff soles for those that must work on hard surfaces. In the young, the flexible soles may be acceptable, as they do permit freer exercise of the arches.

Strengthening the muscles by graduated exercises when they have been weakened by a sedentary occupation or long convalescence will prevent serious strain.—*G. Mosser Taylor*, M.D.—*Good Health*, (*London*).

* * *

Betel Nut as a Useful Tæniafuge.—Liu (*Chinese Medical Journal*, Sept., 1936, page 1273) reports on the successful results obtained by betel (areca) nut in ten cases of tapeworm infestation. The nut is given either in powdered form or in decoction and the latter is prepared by boiling thirty sliced nuts in 200 c.c. of distilled water for 30 to 60 minutes. The dose is 30 gm. and is given on empty stomach in the early morning and the patient is allowed no food for the next six hours. The bowels usually begin to move in 3 hours but if they do not, saline or castor oil is given after that. The unworming capacity of betel-nut is found to be quite efficient.—*J. I. M. A.*

* * *

Desert Sand a Healer.—The beneficial effects of the desert sand upon the respiratory organs have been known for years. All Egyptian tuberculosaria rise on the border of the desert. But its effects are felt even at a distance, for example, in Switzerland Meteorological observations have confirmed the theory that minute particles of the Sahara sand are carried from the desert, across the Mediterranean, deep into the heart of Europe, where they are deposited by the winds in certain valleys, famous for their soothing and healthful air.

Dr. Gehrcke of Berlin has constructed a device for the inhaling of small quantities of this newest of remedies, in the form of a cloud of invisible dust. The method is applied in practice at a newly founded Berlin hospital, where remarkable results have already been obtained in the treatment of pulmonary consumption, asthma, and chronic bronchial catarrh. Subjects suffering from severe attacks of grippe were given immediate relief by this method.—*O. W.*